

The opinion in support of the decision being entered today  
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TE-FU CHEN, TSUNG-YU LEI, KUO-CHENG LIN and  
WEN-SHI HUANG

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Appeal 2007-1582  
Application 10/827,285  
Technology Center 3700

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Decided: September 28, 2007

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Before WILLIAM F. PATE, III, MURRIEL E. CRAWFORD and  
JENNIFER D. BAHR, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Te-Fu Chen et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1-12, the only pending claims. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

### THE INVENTION

Appellants' claimed invention is directed to a fan impeller. Claims 1 and 5 are representative of the claimed invention and read as follows:

1. An impeller for a fan driven by a motor,  
comprising:

a hub, accommodating the motor therein and  
having an upper surface, a sidewall and a center  
point; and

a plurality of blades creating radial air flow  
and having bottom portions directly arranged in a  
circle on the upper surface or the side wall with  
respect to the center point, wherein no connecting  
structure is provided between the hub and the  
blades.

5. The impeller as claimed in claim 1, wherein the  
blades are formed into an annular structure, having  
an outer diameter less than that of the hub.

### THE REJECTION

Appellants seek review of the Examiner's rejections of claims 1-4, 6-10 and 12 under 35 U.S.C. § 102(b) as anticipated by Nagai (US 4,647,271, issued Mar. 3, 1987) and claims 5 and 11 under 35 U.S.C. § 103(a) as unpatentable over Nagai.

The Examiner provides reasoning in support of the rejections in the Answer (mailed October 30, 2006). Appellants present opposing arguments in the Appeal Brief (filed October 5, 2006) and Reply Brief (filed December 29, 2006).

## OPINION

The first issue before us is whether Appellants have demonstrated the Examiner erred in rejecting claims 1-4, 6-10 and 12 as anticipated by Nagai. Appellants do not argue claims 2-4, 6-10 and 12 separately from claim 1. Thus, in accordance with 37 C.F.R. § 41.37(c)(1)(vii), we have selected claim 1 as the representative claim to decide the appeal of this rejection, with claims 2-4, 6-10 and 12 standing or falling with claim 1. The first issue turns on whether Nagai's blades 43 (Fig. 23) have bottom portions directly arranged on the upper surface or side wall of the hub, with no connecting structure provided between the hub and the blades, as called for in claim 1.

Appellants contend that Nagai's blades 43 are mounted on the hub plate 42 and not on the hub 41 and, consequently, the blades are not directly disposed on the hub (Appeal Br. 8). As best seen in Fig. 23, Nagai discloses an impeller comprising an integrally molded hub 41, hub plate 42, blades 43 and shroud 44 (Nagai 9:18-21). The bottom portions of blades 43 are disposed directly on the upper surface of the hub plate 42 portion of the impeller. The question is whether the hub plate 42 can reasonably be considered part of the "hub" as that term is used in Appellants' claim 1, in which case Nagai satisfies the limitation at issue. For the reasons that follow, we conclude that hub plate 42 can reasonably be considered part of the "hub" and that the limitation at issue is met by Nagai.

Appellants' "hub" is the structure of the impeller that covers the motor (Specification 4:21-22 and 27-28). Nagai's combined hub 41 and hub

plate 42 likewise cover the motor (see, for example, Nagai, Figs. 1 and 8<sup>1</sup>). Thus, Nagai's hub 41 and hub plate 42 correspond to Appellants' "hub" as used in Appellants' claim 1. While anticipation requires the disclosure of each and every limitation of the claim at issue in a single prior art reference, it does not require such disclosure *in haec verba*. *In re Bode*, 550 F.2d 656, 660, 193 USPQ 12, 16 (CCPA 1977). Thus, that Nagai separately refers to components of this combined structure as a hub and hub plate is of no moment.

In light of the above, Appellants' argument does not demonstrate the Examiner erred in rejecting claim 1 as anticipated by Nagai. The rejection of claim 1, and claims 2-4, 6-10 and 12 standing or falling with claim 1, as anticipated by Nagai is sustained.

The next issue before us is whether it would have been obvious to modify Nagai to provide the annular structure formed by blades 43 with an outer diameter less than that of the hub, that is, hub 41 and hub plate 42, as called for in claims 5 and 11. We conclude that such modification would not have been obvious.

Nagai specifically discloses that the outer diameter of the blades 43, which is defined by the inner diameter of the shroud 44, is greater than or equal to the diameter of the hub plate 42 (Nagai 2:15-16; 6:19-21; 9:56-59). Such an arrangement permits the use of two molds of simple construction comprising a movable mold and a stationary mold, with the parting plane of the molds located in the blade section within the difference of the hub plate

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<sup>1</sup> While Nagai does not illustrate the motor in Fig. 23, a person of ordinary skill in the art would understand that the motor is disposed under and shielded or covered by the hub 41 and hub plate 42 of Fig. 23.

diameter and inner shroud (outer blade) diameter, to integrally mold the hub, hub plate, blades and shroud of the impeller as one piece (Nagai 2:17-21; 6:26-60). To modify the impeller so that the blade outer diameter, and thus the shroud inner diameter, is less than that of the hub plate would be counter to this objective of Nagai and thus would not have been obvious. The rejection of claims 5 and 11 as unpatentable over Nagai is reversed.

#### SUMMARY

The decision of the Examiner is affirmed as to claims 1-4, 6-10 and 12 and reversed as to claims 5 and 11.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

#### AFFIRMED-IN-PART

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